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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/692,748	10/19/2000	M. Chapman Findlay III	35512-00056	7074

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EXAMINER

NGUYEN, NGA B

ART UNIT	PAPER NUMBER
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3628

DATE MAILED: 03/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/692,748

Applicant(s)

FINDLAY ET AL.

Examiner

Nga B. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 19 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is the answer to the communication filed on October 19, 2000, which paper has been placed of record in the file.
2. Claims 1-32 are pending in this application.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-30 are rejected under 35 U.S.C 101 because the claimed invention is directed to non-statutory subject matter, particularly, an abstract idea.

The claims, as presently claimed and best understood were reconsidered in light of the "Examination Guidelines for Computer-Related Inventions" and were found to be non-statutory. Discussion of the analysis of the claims under the guidelines follows.

Claims 1-30 merely manipulate an abstract idea that is not within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena) that do not apply, involve, use, or advance the technological arts fail to promote the "progress of science and the useful arts" (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter.

As to claims 1-30, the invention is not implemented on a specific apparatus; therefore, the invention is not directed to the technological arts. To be statutory, the utility of an invention must be within the technological arts. The definition of

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"technology" is the "application of science and engineering to the development of machines and procedures in order to enhance or improve human conditions, or at least to improve human efficiency in some respect." (Computer Dictionary 384 (Microsoft Press, 2d ed. 1994)). When one looks to the present specification to determine what the applicant has invented, the invention appears to be a series of steps performed on a computer. It is clear that claims 1-30 are intended to be directed to the abstract method apart from the apparatus for performing the method. Therefore, claims 1-30 are non-statutory, because they are directed solely to an abstract idea without practical application in the technological arts.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-19 and 21-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Gatto, U.S. Patent No. 6,681,211.

Regarding to claim 1, Gatto discloses a method for forecasting the direction in which the price of an asset will move, the method comprising:

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(a) identifying a group of exogenous variables that are likely to influence observed prices of an asset (column 19, lines 10-48, identifying the factors for a model);

(b) processing historical data for value of the exogenous variables and historical data for the observed prices of the asset over a time period to obtain a formula for calculating price estimates for the asset as a function of the exogenous variables (column 11, lines 10-52);

(c) calculating the formula using an input set of observed values for the exogenous variable at given point in time, so as to obtain a price estimate for the asset at the given point in time (column 11, line 62-column 12, line 37);

(d) determining a similarity measure by comparing the price estimate from the asset at the given point in time to the observed price for the asset at the given point in time (column 12, lines 37-53); and

(e) forecasting a direction in which the observed price of the asset will move based on the similarity measure (column 15, lines 10-33).

Regarding to claim 2, Gatto discloses the asset is a stock issued by a company doing business in a particular industry, and wherein a substantial number of the exogenous variables reflect prices of stocks issued by other companies that are also doing business in the particular industry (column 9, lines 53-63 and column 10, lines 20-52).

Regarding to claim 3, Gatto discloses the exogenous variables include macroeconomic variables (column 20, line 47-column 22, line 67).

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Regarding to claim 4, Gatto discloses at least some of the exogenous variables are identified in step (a) by performing stepwise regression over a number of potential exogenous variables and selecting the potential exogenous variables that provide a best fit (column 22, lines 34-52).

Regarding to claim 5, Gatto discloses at least some of the exogenous variables are identified in step (a) by modeling over a number of potential exogenous variables and selecting a set of the potential exogenous variables that tend to maximize predictive power of the modeling (column 19, lines 10-48).

Regarding to claim 6, Gatto discloses at least some of the exogenous variables are identified in step (a) by performing a statistical clustering technique (column 20, lines 8-46).

Regarding to claims 7-8, Gatto discloses the given point in time is after the time period; the given point in time is approximately 30 days after the time period ends (column 12, lines 1-37).

Regarding to claim 9, Gatto discloses the time period is determined using a stepwise approach (column 12, lines 1-37).

Regarding to claim 10, Gatto discloses the asset comprises a share of stock issued by a corporation, and wherein the time period is determined base on changes affecting the corporation (column 10, lines 20-52).

Regarding to claim 11, Gatto discloses duration of the time period is selected so as to maximize a predictive power of the formula over the time period (column 12, lines 1-37).

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Regarding to claim 12, Gatto discloses the processing in step (b) comprises performing a statistical regression technique (column 11, lines 10-52).

Regarding to claim 13, Gatto discloses the processing in step (b) comprises performing a neural network technique (column 8, lines 3-40).

Regarding to claim 14, Gatto discloses the step (d) comprises a step of (d1) determining a difference between the price estimate for the asset at the given point in time and the observed price for the asset at the given point in time (column 12, lines 37-53).

Regarding to claim 15, Gatto discloses the step (d) further comprises a step of (d2) calculating a ratio of the difference determined in sep (d1) to the price estimate for the asset at the given point in time (column 12, lines 37-53).

Regarding to claim 16, Gatto discloses the step (d) comprise determining a ratio of the price estimate for the asset at the given point in time to the observed price for the asset at the given point in time (column 12, lines 37-53).

Regarding to claim 17, Gatto discloses a step of: (f) determining a measure of accuracy variability, over the time period, of the price estimated for the asset calculated using the formula (column 20, line 47-column 21, line 13).

Regarding to claim 18, Gatto discloses a step of: (g) determining a measure of a statistical significance of the similarity measure by comparing the similarity measure to the measure of accuracy variability (column 23, lines 8-67).

Regarding to claim 19, Gatto discloses step (g) comprises calculating a ratio of the similarity measure to the measure of accuracy variability (column 21, lines 3-10).

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Regarding to claim 21, Gatto discloses the step (b) comprises steps of: (b1) obtaining a first formula for calculating price estimates for the asset as a function of macroeconomic variables; (b2) obtaining a second formula for calculating price estimates for the asset as a function of prices of other assets that are related to the asset; and (b3) combining estimates from the first formula and the second formula to obtain the formula (column 24, lines 28-40).

Regarding to claim 22, Gatto discloses a step of using price estimates from the first formula to remove macroeconomic effects from price estimates calculated using the second formula (column 24, lines 40-55).

Regarding to claim 23, Gatto discloses a step of: (f) repeating steps (c) and (d) for plural points in time after the time period ends in order to obtain plural similarity measures, and wherein the forecasting of step (e) is based on the plural similarity measures (column 24, lines 40-55).

Regarding to claim 24, Gatto discloses a step of: (g) calculating a central tendency of the plural similarity measures, and wherein the forecasting of step (e) is based on the central tendency (column 15, lines 10-62).

Regarding to claim 25, Gatto discloses a step of: (g) calculating a weighed average of the plural similarity measures, and wherein the forecasting of step (e) is based on the weighed average (column 23, lines 8-22).

Regarding to claim 26, Gatto discloses a step of: (f) repeating steps (b), (c) and (d) using different time periods, and wherein the forecasting in step (e) is based on the

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similarity measures determined by sing the different time periods (column 22, lines 4-33).

Regarding to claim 27, Gatto discloses the different time periods have approximately a same duration (column 22, lines 4-33).

Regarding to claim 28, Gatto discloses the different time periods include a time period ending approximately 30 days prior to the given point in time and a time period ending approximately 90 days prior to the given point in time (column 22, lines 4-33).

Regarding to claim 29, Gatto discloses a step of (g) calculating a ratio of the similarity measure determined by using one of the time periods to the similarity measure determined by using an other of the time periods (column 20, line 59-column 21, line 21).

Regarding to claim 30, Gatto discloses the exogenous variables include prices of other assets that are similar to the asset (column 10, lines 19-52).

Claim 31 is written in means that parallel the limitations found in claim 1 above, therefore, is rejected by the same rationale.

Claim 32 is written in computer-readable medium that parallel the limitations found in claim 1 above, therefore, is rejected by the same rationale.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gatto, U.S. Patent No. 6,681,211.

Regarding to claim 20, Gatto discloses the measure of accuracy variability comprises a standard error of the formula (column 20, lines 48-67 and columns 33-34). Gatto does not teach the standard error of the formula being a square root of an estimate of a variance of errors of the formula. However, calculating the standard error of a formula by a square root of an estimate of a variance of errors is well known in determining the standard error of a formula. Therefore, it would have been obvious to modify Gatto's to include the feature above for the purpose of providing more efficiency for determining the accuracy of a formula.

Conclusion

9. Claims 1-32 are rejected.
10. The prior arts made of record and not relied upon is considered pertinent to applicant's disclosure:

Makivic (US 6,061,662) discloses a simulation method and system for the pricing of financial instruments such as derivative securities.

Eder (US 6,321,205) discloses an automated system and method for modeling and analyzing the financial performance and the future value of a commercial enterprise.

Corby et al. (US 6,418,417) discloses a system and method for valuating weather-based financial instruments.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Nga B. Nguyen whose telephone number is (703) 306-2901. The examiner can normally be reached on Monday-Thursday from 9:00AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung S. Sough can be reached on (703) 308-0505.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 306-1113.

12. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
C/o Technology Center 3600
Washington, DC 20231

Or faxed to:

(703) 872-9326 (for formal communication intended for entry),

or

(703) 308-3691 (for informal or draft communication, please label "PROPOSED" or "DRAFT").

Hand-delivered responses should be brought to Crystal Park 5, 2451 Crystal Drive, Arlington, VA, Seventh Floor (Receptionist).

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March 4, 2004